

Achieving Lafayette Climate Action Goals

Review of Activities and Recommendations of the Lafayette Energy Sustainability Advisory Group (LESAC)

September 5, 2017

Summary Briefing to City Council

(Abridged version to be presented at Council Workshop)

Contents

- Review of LESAC Activities and Energy Action Plan
- Lafayette Greenhouse Gas Inventory
- Municipal Climate Goals
- LESAC Recommendations

LESAC Activities and Energy Action Plan

LESAC leads citywide sustainability efforts and advises Council on sustainability matters

LESAC “is a citizen-member committee which was established by the Lafayette City Council in order to provide advice and direction for the city on matters related to energy sustainability.”

LESAC is composed of 9 volunteer members

- Dawn Mancini Moyer (Chair)
- Emily Miller (Vice-Chair)
- Dan Cross-Call
- Leia Guccione
- Tom Hardie
- Neal Kruis
- Rob Menzies
- Zack Rodgers
- Jeanne Stratton

Critical support and coordination is provided by the City

- Antoinette Maes (Liaison)
- Councilor Chelsea Behanna (City Council Liaison)
- Tammy Tucker (Staff Liaison)

LESAC's 2009 Lafayette Energy Sustainability Master Plan established objectives for our work

Master Plan Objective to reduce citywide greenhouse gas (GHG) emissions

- 20% below 2005 levels by 2020
- 80% below 2005 levels by 2050



Lafayette will not achieve its 2020 GHG objectives

- Since 2009, our emissions have grown rather than declined, largely due to continued growth in city population
 - Increased total building stock (especially residential)
 - Increased vehicle travel and transportation emissions

Master Plan available at <http://www.cityoflafayette.com/DocumentCenter/View/1078>

Current LESAC activities are focused on 6 strategies across 4 sectors

Residential

- Increase energy efficiency measures for historic homes
- Pilot Lafayette lower-middle-income on-bill payment program

Commercial

- Upgrade Lafayette Green Business recognition program
- Work with city on municipal benchmarking for tracking energy use

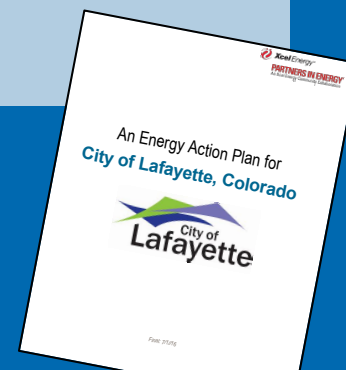
Renewables

- Reduce solar market barriers through streamlining of city codes; achieved Department of Energy SolSmart recognition

Electric Vehicles

- Make Lafayette Electric Vehicle (EV) friendly through investment in charging infrastructure
- Develop EV readiness plan

MOU signed with Xcel Energy's Partners in Energy program to work on these activities, as outlined in 2016 Lafayette Energy Action Plan



Support energy efficiency upgrades for low-income households

On-Bill Finance Program

Purpose

Reduce upfront cost barriers by lending low- and middle-income (LMI) Lafayette homeowners their portion of energy upgrade costs to increase Lafayette participation in Boulder County's 50% discounts on energy conservation services for LMI households.

Program Features

LMI homeowners pay \$65 upfront cost for energy audit. Boulder County pays half of the after rebate costs of energy upgrades. Lafayette On-bill loans allow homeowners to pay their portion over 3-5 years. Energy saving should equal or exceed loan payments (in most cases), putting homeowners in positive cash flow and cutting carbon emissions.

Program Targets

Targeting 6-8 energy saving installations in the first year. There is enough money for 12 projects in the first phase. There is much more money available for Phase 2 if Phase 1 is successful.

Progress to Date

Have secured a \$30,000 pilot grant from Energy Outreach Colorado for seed money to lend to LMI households. Working with HB&C consulting services to define the program and coordinate partners. Have committed LESAC operations budget to pay program partners and to pay the costs of energy audits for LMI households.

Upcoming

Contracts are in final negotiation. Planning Fall launch.



Improve city codes and permitting to streamline solar adoption by Lafayette residents

SolSmart Designation

Purpose Local Governments play a key role in lowering Photovoltaic (PV) costs. The national designation process will lower soft costs in Permitting, Planning, Zoning, and Utility/Community Engagement. **SolSmart is part of the the Department of Energy's SunShot Initiative, which aims to reduce the total installed cost of solar energy systems to \$0.06 per kilowatt-hour (kWh) by 2020.**

Program Targets

- Technical Assistance
- Achieve Early Adopter Status
- Leverage partnerships with Boulder County, Partners in Energy, and NREL
- Collaborate with Lafayette Community Development
- Seek GOLD status – **ACHIEVED in July 2017**

Program Features

- Technical Assistance from NREL and National Solar Foundation
- Improve permitting, inspection, planning, zoning processes
- Community engagement through solar workshops and solar website

Progress to Date: Awarded SolSmart Gold status in July 2017!

Special recognition badges: Inspection Process, Utility Engagement, Development and Finance

Status:

- Propose Solar Code Changes fall 2017
- Solar workshops in fall 2017
- Complete Utility Inspection coordination

"More than any other community I've reviewed, Lafayette seems to have leveraged their Utility Engagement activities to effectively and directly improve their processes with respect to inspection."

Feedback from SolSmart program manager

Work with City to improve municipal operations

Benchmarking City Buildings

Purpose Conduct benchmarking of Municipal Buildings to identify and evaluate energy and cost saving measures and compare performance to similar building types. Benchmarking is the first step toward building Energy Management of Public Buildings.

Program Features

- Identify lowest performing buildings and identify possible measures,
- Provide detailed report on building performance for benchmarked properties, and 3) Develop a voluntary reporting protocol to set commercial example

Program Targets

- Enroll Seven Municipal Buildings (Recreation Center, Police Station, Lamont Does, City Hall, Library, Senior Center) in the EnergyStar Benchmarking program using Portfolio manager and Xcel's benchmarking program.
- Benchmark and complete analysis on City Hall for data on pre-HVAC upgrade (TBD)
- Evaluate Solar Power Purchase Agreements and impact on Building Energy Performance
- On-going process for building performance monitoring
- Voluntary reporting to support broader Commercial energy benchmarking programs

Progress to Date

City account has been created and buildings are enrolled. Analysis is in progress

Status Analysis report to be provided to City



The most-used energy measurement and tracking tool for commercial buildings.

Help Lafayette be “EV Ready”



Electric Vehicle Infrastructure Program

Purpose Encourage the adoption and use of electric vehicles (EV) by providing EV infrastructure and removing adoption barriers. EVs provide a support a renewable and efficient transportation energy infrastructure with lower greenhouse gas emissions.

Program Features

- Develop an EV infrastructure roadmap for Lafayette leveraging partnerships with SWEEP and Clean Cities
- Develop an EV pricing structure and implementation with a new generation of EV chargers
- Upgrade High utilization charging station at the Library with new technology for improved operations and driver features

Program Targets

- Create an adequate network of EV charging stations throughout Lafayette at public buildings and private businesses to ease "range anxiety" and minimize negative impacts related to EV adoption
- Increase workplace charging
- Develop tiered pricing to avoid increased City Peak Demand Charges and offer rates below comparable fuel efficient vehicles. Incent EV adoption rates in Lafayette by 1% (currently .3% of 25000 registered vehicles are EVs).

Progress to Date

- Awarded RAQC/CEO funding for 4 EV stations
- Awarded Boulder County Grant Funding to upgrade Library charging station
- Complete utilization analysis of existing Eaton Stations
- Develop charging cost structure

Status

- Develop comprehensive Infrastructure Plan
- Coordinate with the City of Denver DC Fast Charging Study and VW Settlement programs by collaborating to identify fast charge needs in Lafayette.

Coordination with regional and state governments



Colorado Communities for Climate Action (CC4CA)

Purpose CC4CA is a year-old coalition of 14 local governments that advocates for state and federal policies to protect Colorado's climate for current and future generations.

2016-2017 Policy Priorities

1. Supports state and federal government collaboration with Colorado's local governments to advance local climate protection action through the provision of information, technical assistance, funding, and other resources
2. Supports continued and adequate state and federal funding of programs directly and indirectly related to achieving reductions in heat-trapping emission
3. Supports analyses, financial incentives, and enabling policies for the development and deployment of clean energy technologies

2017 Activities

- Took position on 13 legislative bills impacting sustainability (in support of 12, 4 of which enacted; opposed 1 to repeal EV tax incentives)
- Delivered letter to Governor in support of executive order on climate goals and desire to coordinate activities with local governments
- Relationship building including meetings with Governor's Office, leaders of General Assembly, state agency staff, and environmental organizations
- 14 participating communities represent one-eighth of Colorado residents

Initial CC4CA member communities:

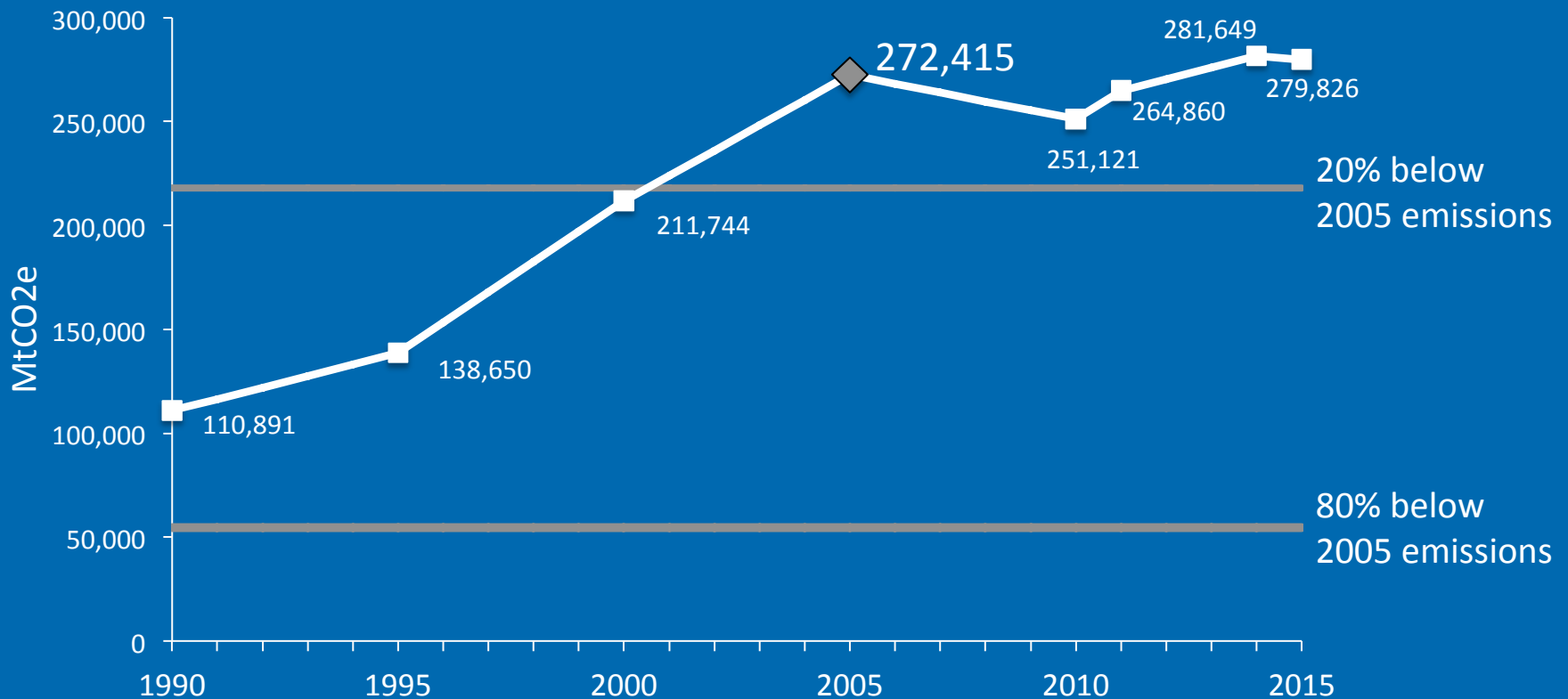
Boulder County, City of Fort Collins, City of Westminster, City of Boulder, Eagle County, Summit County, City of Lafayette, City of Golden, Pitkin County, San Miguel County, City of Aspen, Town of Vail, Town of Telluride, Town of Mountain Village

Learn more at <http://cc4ca.org/>

Lafayette Greenhouse Gas Inventory

Achieving GHG reduction goals will require a change in course

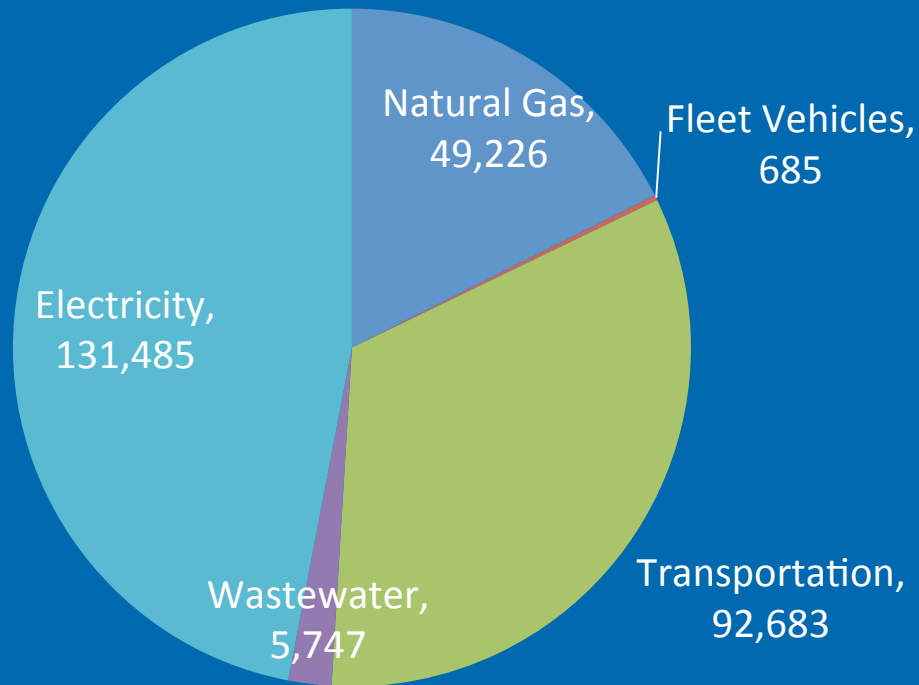
Annual Lafayette Economy Wide Greenhouse Gas Emissions, 1990-2015



Sources: Historical estimates (1990, 1995, 2000, 2005, 2010, 2011) from Boulder County *GHG Inventory & SEP Analysis, 2012 Edition*; 2014 and 2015 inventories conducted by LESAC

Electricity and transportation constitute 80% of Lafayette's GHG emissions

2015 GHG Emissions
MtCO₂e



Current efforts are making important but small reductions

Estimated Emission Reductions in 2015 from Clean Energy Initiatives

Program	Emissions Reduced (MtCO₂e)	% of Total 2015 Lafayette Emissions
Commercial Conservation	456	0.16%
Solar Programs	1,108	0.40%
Residential Conservation		
Electricity	253	0.09%
Natural Gas	282	0.10%
Total	2,100	0.75%

Emission estimates based on Xcel Energy community energy report

Municipal Climate Goals

Across the U.S., communities large and small are stepping up to address climate change

Home Boulder County News Story

Nederland commits to 100 percent renewable energy by 2025

By Alex Burness
Staff Writer

POSTED: 08/16/2017 07:33:21 AM MDT | UPDATED: 2 DAYS AGO

Madison approves 100 percent clean energy goals, up to \$250,000 for consultant

Atlanta Commits To 100 Percent Renewable Energy By 2035

The city becomes the 27th in the U.S. to pledge to go totally green.



By Chris D.

OREGON ENVIRONMENTAL NEWS

Portland, Multnomah County commit to using 100% renewable energy by 2050

POLITIC

Denver aims to cut carbon emissions 80 percent by 2050

First in Louisiana, Abita Springs moves toward clean energy

Updated on March 24, 2017 at 10:20 AM, Posted on March 23, 2017 at 1:10 PM

Aspen is third U.S. city to reach 100% renewable energy

September 1, 2015

...ee U.S. cities to run on 100 percent renewable energy, according to members of the city's environmental and project

that is g
goal, sai

Boulder Commits to 100% Clean Energy

Boulder, Colorado Mayor Suzanne Jones announced Wednesday that the city would commit to being powered by 100 percent renewable electricity by 2030. Boulder now represents the 17th city in the U.S. to make a 100 percent clean energy commitment along with Aspen.

AROUND THE NATION

Texas City Leads The Way On Renewable Energy

March 7, 2017 - 4:44 PM ET

...first cities in the country to be 100 percent powered

ENERGY

Wind Energy
In The Heart

Recommendations

Achieving Lafayette's sustainability goals is hampered by practical challenges of a small, growing city

- Lack of official policy or city commitment to GHG reduction
- Informal process for emissions inventory, and lack of integration into city planning activities
- Continued population growth of Lafayette, with resulting growth in housing stock, transportation and other emission sources
- Limited city resources and no staff member solely dedicated to sustainability
- Complex issues that span beyond city boundaries
- Volunteer time of citizen committees

LESAC recommendations

Commit

- Adopt an 80% by 2050 greenhouse gas reduction goal
 - 2005 as base year (i.e., 80% reductions below 2005 levels)
- Adopt a 100% by 2030 renewable energy goal and work with utility to achieve

Plan and Evaluate

- Fund development of a roadmap to reach adopted goals, \$30,000 - \$50,000
- Conduct annual review of progress and adapt programs as needed
- Formalize GHG inventory process (using city tool, managed by contractor) to conduct at regular intervals (e.g., every two years) \$4,000/inventory

Invest

- Increase resources focused on achievement of adopted GHG goals
 - Integrate GHG reduction goals into city planning and operations
 - Work with partners to leverage existing programs and resources (e.g., transportation agencies, Boulder County, NREL)

Suggested Next Steps

Adopt Goals

City resolution to adopt goals proposed for the September 19th City Council Meeting

- 80% by 2050 greenhouse gas reduction goal
- 100% by 2030 renewable energy goal

Hire Contractor to Conduct Roadmap Development

Suggested scope for Roadmap Development:

- ID critical strategic initiatives to achieve goals
- Evaluate and clarify renewable options for Lafayette
- Recommend options to incorporate GHG accounting into city planning and goal tracking
- Identify municipal best practices for achieving GHG goals
- ID changes to city operations necessary to operationalize strategies
- Conduct stakeholder input process to inform roadmap and identified strategies (incl. city staff, Council, LESAC, relevant City Committees)
- ID available funding sources to implement strategies

Review and Act

Following completion of roadmap (target Q2 2018), review with city staff and Council to assess options and incorporate into city strategies